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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,724	08/05/2003	Guoming G. Zhu	46107-0068	8636

7590 10/28/2004

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EXAMINER

HOANG, JOHNNY H

ART UNIT	PAPER NUMBER
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3747

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,724

Applicant(s)

ZHU, GUOMING G.

Examiner

Johnny H. Hoang

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11, 13, 14, 17, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 7, 12, 15-16, and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/05/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 8-11, 13-14, 17-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Deutsch et al (US 5,054,461).

Regarding claim 1, the reference of Deutsch et al discloses an ignition system including the following subject matters:

multiplexing ionization signals (col. 3, lines 54-65) from a plurality of cylinders (col. 2, lines 25-39),

calculating an action period (col. 2, line 63 through col. 3, line 17);

combining said ionization signals, whereby information from said ionization signals is spaced apart by at least an action period in duration (col. 3, lines 39-65); and

outputting said ionization signals, whereby no overlap of information occurs between said ionization signals (col. 4, lines 10-59).

Regarding claim 2, (col. 2, lines 25-51).

Regarding claims 3-5, as discussed in claim 1.

Regarding claim 8, the reference of Deutsch et al discloses an ignition system including the following subject matters:

a plurality of cylinders (col. 2, lines 25-39);

Art Unit: 3747

a plurality of ignition systems (col. 2, lines 25-39), whereby each of said plurality of ignition systems has an ionization signal output and is operably connected to at least one of said plurality of cylinders (as discussed in claim 1);

a summer having a plurality of inputs and an output, wherein at least one of said ionization signal outputs is operably connected to one of said plurality of inputs of said multiplexer (col. 3, lines 39-65); and

a powertrain control module (18) having at least one input operably connected to said output of said summer (above discussions).

Regarding claims 9-10, as above rejections.

Regarding claim 11, as above discussions and further includes:

a controller (18);

memory operably connected to said controller (18); and

software stored in said memory (col. 2, lines 40-50).

Regarding claims 13-14, as discussed in all above rejected claims.

Regarding claims 17-18, and 20, as above discussions.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deutsch et al.

Art Unit: 3747

The reference to Deutsch et al discloses all that is claimed except number of crank degrees for a cylinder to cycle through all strokes is 720 degrees and said total number of said plurality of cylinders is five. The reference to Deutsch et al teaches the invention is useful with others engines having any number of cylinders (col. 2, lines 34-39), and a conventional reluctance-type sensor maybe use d to generate on leads A or B signals that are indicative of the position of the engine's crankshaft. It would have been an obvious to one of ordinary skill in the art at the time the invention was made to have utilized the ignition system for an internal combustion engine being operating with the number of crank degrees for a cylinder to cycle through all strokes is 720 degrees and said total number of said plurality of cylinders is five.

Allowable Subject Matter

5. Claims 7, 12, 15-16, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The copies of U.S Patent are provided.

VanDyne (US 6,029,627).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny H. Hoang whose telephone number is (703) 308-2782. The examiner can normally be reached on Monday - Thursday (7:00Am-5: 30Pm).

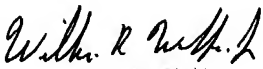
Art Unit: 3747

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHH
October 21, 2004

Johnny H. Hoang
Examiner
Art Unit 3747


Willis R. Wolfe
Primary Examiner
Art Unit 3747